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MARINE CORPS ORDER 11000.25

From: Commandant of the Marine Corps

To: Distribution List

Subj: INSTALLATION GEOSPATIAL INFORMATION AND SERVICES

Ref: (a) DoD Directive 8115.01, "Information Technology Portfolio Management," October 10, 2005
(b) Executive Order 12906, "Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure" April 11, 1994
(c) GEOFidelis Data Security and Classification Guide (NOTAL)
(d) Spatial Data Standards for Facilities, Infrastructure and Environment (SDSFIE) (NOTAL)
(e) Naval Facilities Engineering Command's Electronic Design Deliverable Manual of Policies and Procedures (NOTAL)

Encl: (1) Terms and Definitions
(2) Digital Spatial and Geospatial Standards
(3) Geospatial Data Sharing and Data Security
(4) Geospatial Functional Dataset Themes and Dataset Leads

1. Situation. The Marine Corps mission requires efficient operations of our installations. Marine Corps installation management, environmental stewardship, homeland security, and mission support mandate per references (a) through (e) that the Marine Corps have access to the best possible information about our installations and their surroundings. Geospatial information is critical to provide effective installation management, improve our stewardship of natural resources, protect the environment, and support the training of Operating Forces. Geospatial information must be readily available to support the Marine Corps mission.

2. Mission. This Order provides policy, guidance and standards for acquiring, utilizing and implementing Marine Corps

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Installation Geospatial Information and Services (IGI&S), also referred to as GEOFidelis, in support of Marine Corps installation management.

3. Execution

a. Commander's Intent and Concept of Operations

(1) Commander's Intent

(a) Geospatial information and services are a core capability to support the mission requirements for installation management. All activities with installation management responsibilities shall include IGI&S in their management, review, analysis, and decision making process in order to effectively and efficiently meet their installation management mission.

(b) All Marine Corps IGI&S capabilities will provide precise and reliable information at the installation, region and enterprise level and will be based on a common infrastructure foundation that supports inter-operability across the Marine Corps. This capability will be based on a standard IGI&S data model and a regional-based enterprise architecture.

(c) This Order, while providing guidance, allows the regional and installation commanders flexibility in administering the IGI&S program. Enclosure (1) provides a list of terms and definitions used in this Order.

(2) Concept of Operations

(a) All Marine Corps IGI&S shall be:

1. Consistent with law, reference (b), Congressional guidance, and DoD, DON, and Marine Corps policy.

2. In direct support of mission requirements.

3. Accomplished through the most economic means.

4. Implemented in accordance with reference (a) in accordance with the approved IGI&S enterprise architecture views.

5. Implemented using the data standards and protocols outlined in enclosure (2).

6. In compliance with the data sharing and data security protocols outlined in enclosure (3).

(b) All commanders with installation management responsibilities will deploy IGI&S capabilities as follows:

1. Develop, acquire and maintain, at a minimum, all Common Installation Picture (CIP) data layers, with associated metadata, as identified in the GEOFidelis Data Model.

2. Maintain all applicable Mission Datasets, with associated metadata, in accordance with the standard data model outlined in the GEOFidelis Data Model.

3. Develop a data management plan for the management of all geospatial data assets and imagery in concert with the GEOFidelis Data Management Guide.

4. Perform quality assurance and control on all geospatial data to ensure compliance with Marine Corps specifications and to ensure the appropriate accuracy required to meet the business need.

5. Develop a process to capture geospatial data in all appropriate facilities, environmental and other related projects, contracts and studies. All data from these projects, contracts and studies should be provided to the Marine Corps in a format, and data standards outlined in enclosure (2), to ensure compatibility with existing geospatial data sets.

(c) Each Functional Dataset Lead is responsible for creating, purchasing and providing individual datasets to the enterprise. This includes funding the portion of the data and services required to support their specific operational needs in

accordance with the policies set forth in this Order. Enclosure (4) details the dataset themes and Datasets Leads within the Marine Corps.

b. Coordinating Instructions. Recommendations on improvements to the contents of this Order are encouraged and should be submitted to the Commandant of the Marine Corps (CMC) (LFF-2) via the appropriate chain of command.

4. Administration and Logistics

a. The CMC (LF) will provide leadership, functional advocacy, central direction and oversight for implementing and utilizing IGI&S to support Marine Corps installation management. CMC (LF) will:

(1) Serve as the Marine Corps program sponsor for IGI&S, and establish goals, policies, guidance and standards for Marine Corps IGI&S to include, but not limited to, data management, data accuracy, data security, data sharing and metadata.

(2) Act as Resource Proponent for installation geospatial information and data requirements.

(3) Coordinate with the Director of Intelligence (CMC Code IPI), the Marine Corps functional manager for Geospatial Intelligence, on the following:

(a) To deal with all matters pertaining to the National Geospatial-Intelligence Agency (NGA).

(b) To develop and ensure a Marine Corps enterprise approach for all matters dealing with geospatial information.

(c) To ensure IGI&S standards, training, processes and services are available for use in tactical and expeditionary implementations of IGI&S for the Operating Forces by Topographic Platoons and Geographic Intelligence Marines (MOS 0261).

(4) Act as functional liaison with DON, DoD and other Government agencies concerning Marine Corps IGI&S.

(5) Implement an IT PfM process for geospatial assets, systems, applications and technology in accordance with DoD, DON and Marine Corps policy and standards.

(6) Establish a concept of operations and an enterprise architecture for IGI&S.

(7) Appoint a Geospatial Information Officer to oversee the GEOFidelis program and the development and implementation of the policy and guidance required by this Order.

b. Functional Dataset Leads are responsible for ensuring functional area policies and guidelines reflect requirements and policies established by this Order. These responsibilities include the following:

(1) Establish clear guidelines adhering to standards that ensure interoperability and the sharing of data across the Marine Corps.

(2) Fund the portion of the data, applications, and services required to support their specific operational needs within the established IT PfM process for geospatial assets, systems, applications and technology and other DoD, DON and Marine Corps policy.

(3) Ensure installation level functional data stewards and subject matter experts create, purchase and provide individual mission datasets to the enterprise.

c. Regional commanders with installation management responsibilities shall implement and be accountable for an IGI&S capability across their respective areas of responsibility according to the policy and guidelines detailed in this Order. Specifically, they shall:

(1) Establish and implement regional IGI&S policy in accordance with Marine Corps policy, standards, and guidance and regional requirements.

(2) Identify, validate and manage regional IGI&S requirements and coordinate those requirements with CMC (LF).

(3) Implement and comply with IT PfM processes for geospatial assets, systems, applications and technology in accordance with Marine Corps policy and standards.

(4) Develop a regional data management plan to ensure proper data acquisition, sustainment, quality assurance and control of all geospatial data assets are maintained.

(5) Appoint a Geospatial Information Officer (GIO) to oversee the regional command's IGI&S efforts, provide expertise to the regional commander, and ensure implementation at the region and installation level of all standards, policies and procedures as outlined in this Order.

d. Installation commanders shall implement and be accountable for IGI&S across their respective installations according to the policy and guidelines detailed in this Order. These responsibilities include the following:

(1) Identify local IGI&S requirements and coordinate those requirements and activities with the appropriate regional command(s) and CMC (LF).

(2) Maintain minimum required IGI&S data and functional capability as outlined in this Order.

(3) Ensure installation execution and compliance with Marine Corps and regional IGI&S policy, standards, and guidance.

(4) Act as functional liaison with state and local agencies within their area of responsibility to promote sharing of data.

(5) Develop an installation data management plan to ensure proper data acquisition, sustainment, quality assurance and control of all geospatial data assets are maintained.

(6) Appoint a single lead IGI&S manager to oversee the installation's IGI&S efforts, provide IGI&S expertise to the installation commander, coordinate with the regional GIO and ensure installation implementation of all standards, policies and procedures as outlined in this Order.

(7) Identify geospatial data stewards and subject matter experts, as required, across the mission domain to ensure quality and accuracy of installation data and metadata.

5. Command and Signal

a. Command. This Order applies to all non-tactical IGI&S to include data creation, collection, acquisition, editing, modification, and management (both in-house and contracted). Excluded from the provisions of this Order are geospatial information and services for tactical and intelligence purposes.

b. Signal. This Order is effective the date signed.

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Terms And Definitions

1. Common Installation Picture (CIP). The CIP is a defined dataset of geospatial layers and imagery used for strategic purposes that forms a common baseline of all installations. The CIP data is the minimal required geospatial data for each installation. The CIP data layers will be used for strategic planning and shared at all levels of the Marine Corps, Department of Navy (DON) and Department of Defense (DoD) to support Marine Corps, DON and DoD mission requirements and to comply with all geospatial related Executive Orders, DoD, DON and Marine Corps instructions, guidance and mandates. The CIP will provide the geospatial infrastructure foundation for any installation or regional Common Operational Picture.

2. Computer Aided Drafting and Design (CADD). A computerized tool that replaces manual drafting on paper by allowing the designer to formulate projects on screen, using two- and three-dimensional representations.

3. Data Model. A representation of the specific information requirements of a business area.

4. Dataset. A collection of related data.

5. Dataset Theme. Broad, generalized grouping of functional datasets for data management.

6. Enterprise Architecture. The explicit description and documentation of the current and desired relationships among business and management processes and information technology.

7. Functional Dataset Lead. An agency, department, activity or organization that has lead responsibility for coordinating the collection, coverage and stewardship, including maintenance and update, of a specific spatial data theme or mission dataset.

8. GEOFidelis. The common pseudonym given to the Marine Corps IGI&S program.

9. GEOFidelis Data Model. The GEOFidelis Data Model is a defined model of standard data layers based on a common interpretation of reference (d) and on the best practices leveraged from Marine Corps installations. The goal of the data model is to provide a data model that incorporates enough breadth for mission execution and the ability to record data in a consistent manner across the Marine Corps.

10. Geographic Information. Coordinate and attribute data for location-based features, usually in the categories of point (e.g., a well), line (e.g., a road), polygon (e.g., a forest), cell (e.g., a raster-based “rectangle”), or coordinates (e.g., the latitude-longitude of a point on the ground).

11. Geospatial Information. Data that identifies the geographic location and characteristics of natural or constructed features and boundaries on the Earth and includes: (a) statistical data and information derived from, among other things, remote sensing, mapping, and surveying technologies; and (b) mapping, charting, and geodetic data, and related products.

12. Geospatial Information System (GIS). A computerized tool used to input, edit, store, retrieve, manage, analyze, and present geographic or geospatial information. GIS may refer to hardware, software, data or any combination of the three.

13. Installation Geospatial Information and Services (IGI&S). The data, people, hardware, software, procedures and policies required to perform installation management GIS support functions such as installation management, mission support, force protection, homeland security, and training. Geospatial information provides the basic framework for installation visualization. It includes information produced by multiple sources to common interoperable data standards. It may be presented in the form of: printed maps, charts and publications; digital simulations and modeling databases; photographic forms; or digitized maps and charts or attributed centerline data. Geospatial services include tools that enable

users to access and manipulate data, and also include instruction, training, laboratory support, and guidance for the use of geospatial data.

14. Installation Management. The policies, procedures and process which ensure the availability of responsive and effective land, facilities, structures and utilities to customer organizations and authorized individuals and families. The assets and services are provided subject to prevailing standards which recognize budget constraints.

15. Metadata. Descriptive information about data, such as content, source, vintage, accuracy, condition, projection, responsible party, contact phone number, method of collection, and other characteristics.

16. Mission Datasets. The Mission Datasets are a defined list of standard geospatial data layers supporting one or more functional area's specific mission or business process. The Mission Datasets are a subset of the installations geospatial dataset. The Mission Dataset will have a common Marine Corps interpretation, known as a data model, to facilitate the ability to record data in a consistent manner across the Marine Corps.

17. Spatial Data. Any and all data usually collected in a GIS or CADD system that represents objects that have a location and are found on the Earth.

18. Standards. Documented agreements containing technical specifications or other precise criteria to be used consistently as rules, guidelines, or definitions of characteristics to ensure that materials, products, processes, or services are fit for their purposes.

Digital Spatial and Geospatial Standards

1. Digital spatial and geospatial data used for installation management shall be acquired and managed in conformance with the latest version of the standards and policies list below. Execution of these standards at all levels supports compliance with reference (b) and DoD guidance.

a. Data Documentation. All existing and newly created spatial and geospatial data (GIS and CADD) will be documented in accordance with the latest DoD approved version of the Federal Geographic Data Committee (FGDC) Content Standards for Digital Geospatial Metadata. CMC (LF) will develop, maintain and publish a GEOFidelis Metadata Standards Document to establish a common and consistent Marine Corps implementation of the metadata standard.

b. Data Standards

(1) The current version of the reference (d) shall be the basis for geospatial database table structure, nomenclature, and attributes to allow for data integration. In order to ensure interoperability, CMC (LF) will develop, publish and maintain a standard GEOFidelis Data Model to establish a common and consistent Marine Corps understanding, interpretation and implementation of the data standard.

(2) CADD drawings used for planning, design, construction, operations, maintenance and demolition of facilities and installations shall be delivered in conformance with the National Computer Aided Design Standard. Drawings should be prepared for bid solicitation in accordance with the reference (e).

c. Projections and Datums. All spatial and geospatial data shall use the World Geodetic System of 1984 (WGS84) datum, and the North American Vertical Datum of 1988 (NAVD88) to ensure data alignment and accuracy. CADD data shall be georeferenced.

d. Data Quality. All spatial data shall be created and maintained at a quality and resolution that ensures accuracy and usefulness for installation management, functional business requirements and mission support. All GIS data created shall meet the FGDC Standard Geospatial Positioning Accuracy Standards for National Standard for Spatial Data Accuracy.

Geospatial Data Sharing and Data Security

1. Data Sharing

a. Marine Corps IGI&S personnel shall implement the requirements of reference (b) and share data across functional and organizational lines, with other DoD, Federal, state and local governments, and non-governmental organizations in accordance with applicable policy, Marine Corps regulations, and state and Federal laws.

b. Marine Corps installations shall ensure all spatial and geospatial data is network accessible and available for use by all installation functional areas in accordance with the GEO*Fidelis* enterprise architecture, except where specifically excluded due to classification restrictions or by policies established by the Functional Dataset Leads.

c. Release of installation geospatial information will be accompanied by a non-disclosure statement or agreement to ensure the receiving party understands and abides by the limitation and use of the specific geospatial information. At a minimum, all IGI&S data shall have a minimum classification of “For Official Use Only”.

d. All commanders with installation management responsibilities will establish a data distribution policy that is centrally managed to ensure the controlled distribution of geospatial data.

2. Data Security

a. CMC (LF) will serve as the Marine Corps office of primary responsibility for installation geospatial information security policy. Functional Dataset Leads for each Marine Corps installation dataset, listed in enclosure (4), will determine the classification level and access constraints for each dataset. Functional Dataset Leads will coordinate the classification level and access constraints for all assets designated as “critical” within the meaning of the DoD and Marine Corps Critical Infrastructure Program with CMC PP&O.

b. All commanders with installation management responsibilities will establish protocols for handling their respective installation's geospatial information and ensuring the appropriate protection of installation geospatial information to best satisfy their assigned mission in accordance with this Order. At a minimum, the protocols established shall comply with reference (c).

GEOSPATIAL FUNCTIONAL DATASET THEMES AND DATASET LEADS

Functional Dataset Themes	**Dataset Leads**	**Data Type**	**Examples**
Natural & Cultural Resources	CMC LFL–1	Cultural, Ecology, Fauna, Flora, Soils, Fire Management, Planning level surveys for INFMPS	Archeological Artifacts, Historic Districts, Endangered Species, Forest Stands
Planning	CMC LFL-2	Land Status, Master Planning	Accident Potential Zones, Land Use, Explosive Safety Arcs
Real Estate	CMC LFL–3	Real Estate, Auditory	Parcels, Easements, Installation Boundaries, Noise Zones
Environmental	CMC LFL–6	Air, Surface Water, Groundwater & Soil Pollution, Hazardous Materials & Waste, Pollution Remediation	Air Pollution Sources, Sampling Points, Hazardous Material Sites, Restoration Sites
Utilities	CMC LFF-1	Water System, Natural Gas, Wastewater, Electrical	Water Lines, Gas Lines, Substations, Septic Tanks
Facility and Real Property	CMC LFF-2	Facilities, Infrastructure, Real Property	Buildings, Roads, Paved Areas, Structures, Athletic Fields
Critical Infrastructure	CMC PP&O	Antiterrorism/ Force Protection (ATFP), Homeland Security	ATFP Barriers, Sensors
Emergency Services	CMC LFF-1	Public Safety Jurisdictions, Disaster Preparedness	Fire Department Area of Responsibility, Evacuation Routes, Preplans
Community/ Recreational Services	CMC M&RA	Community Facilities, Outdoor Recreation	Community Buildings, Horse Trails, Campgrounds and Recreational Areas
IT and Communications	CMC C4	IT Infrastructure	Fiber Optic Lines and Cables, Switches, Antennas, Manholes
Training and Ranges	TECOM	Training, Ranges	Firing Points, Ranges, Surface Danger Zones, Weapons Danger Zones, Dudded Impact Zones, Drop Zones